

IN THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application:

Listing of Claims

Claims 1-16 (Canceled).

17. (currently amended) An energy market system associated with an energy generation and delivery system, the energy market system comprising:

a market user interface, the market user interface exchanging market information with a plurality of market participants;

an energy scheduling subsystem, the energy scheduling subsystem scheduling generation and delivery of energy among market participants in accordance with the market information and in accordance with information relating to the energy generation and delivery system, the energy scheduling subsystem further comprising a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and with a plurality set of energy generation units selected for operation, the scheduling of generation and delivery of energy based at least in part on the security analysis function.

18. (previously presented) The energy market system of claim 17, wherein the information relating to the energy generation and delivery system includes a model of the energy generation and delivery system.

19. (currently amended) The energy market system of claim 17, further comprising a unit commitment function that selects the plurality set of energy generating units selected for operation.

20. (previously presented) The energy market system of claim 17, wherein the energy scheduling subsystem includes an energy pricing function, the energy pricing function determining locational prices for the energy to be delivered.

21. (new) An energy market system associated with an energy generation and delivery system, the energy market system comprising:

a market user interface, the market user interface exchanging market information with a plurality of market participants;

a first database, the first database including market information entered by market participants regarding a plurality of generator bids and a plurality of load bids, the first database further including a model of a transmission network; and

an energy scheduling subsystem operably coupled to the first database, the energy scheduling subsystem scheduling generation and delivery of energy by a plurality of generators in accordance with the market information and in accordance with information relating to the energy generation and delivery system including the model.

22. (new) The energy market system of claim 21, wherein the energy scheduling subsystem is operable to generate a first unit commitment based on market forecasted load and using

transmission line limits based on the model.

23. (new). The energy market system of claim 23, wherein the energy scheduling subsystem is operable to:

perform a security analysis procedure determining a set of violations resulting from simulation of at least one contingency case and the first unit commitment, and generating a second unit commitment different than the first unit commitment conditionally, said conditional generation based at least in part on the set of violations.

24. (new) The energy market system of claim 21, wherein the energy scheduling subsystem includes:

a unit commitment function, the unit commitment function selecting energy generating units for operation in the energy generation and delivery system;

a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and with the energy generation units selected for operation; and

an optimal power flow function, the optimal power flow function determining a configuration of the energy generation and delivery system so as to operate in a secure mode under each one of the contingency conditions.

25. (new) The energy market system of claim 21, wherein the energy scheduling subsystem schedules generation and delivery of energy at least one of a day in advance and an hour in advance.

26. (new) The energy market system of claim 21, wherein the market information includes demand for energy delivery and availability of energy generation.

27. (new) The energy market system of claim 24, wherein the unit commitment function selects energy generating units for operation in each hour of a day in accordance with a study period that includes a plurality of days.

28. (new) The energy market system of claim 24, wherein the energy scheduling subsystem includes an energy pricing function, the energy pricing function determining locational prices for the energy to be delivered.

29. (new) The energy market system of claim 24, wherein an input to the optimal power flow function includes a ramping constraint of a power generation unit.

30. (new) An energy market system associated with an energy generation and delivery system, the energy market system comprising:

    a market interface, the market interface exchanging market information with a plurality of market participants; and

    an energy transmission rights auction subsystem, the energy transmission rights auction subsystem providing for the exchange of energy transmission rights in accordance with the market information and in accordance with information relating to the energy generation and delivery system, said energy transmission rights including a financial

instrument providing an owner with a right to transfer a specific amount of power over a transmission path.

31. (new) The energy market system of claim 30, wherein the energy transmission rights auction subsystem includes:

a case setup function, the case setup function setting up a market case in accordance with the market information;

a feasibility test function, the feasibility test function testing the feasibility of the market case and determining auction results in accordance with information relating to the energy generation and delivery system; and

a post-processing function, the post-processing function providing the auction results to the market participants.

32. (new) The energy market system of claim 31, wherein the feasibility test function includes:

a security analysis function, the security analysis function analyzing the energy generation and delivery system under one or more contingency conditions and in accordance with the market case;

an optimal power flow function, the optimal power flow function determining a configuration of the energy generation and delivery system so as to operate in a secure mode under each one of the contingency conditions and in the absence of a contingency condition; and

an energy rights pricing function, the energy rights pricing function determining prices

for the energy transmission rights to be exchanged in accordance with the auction results.

33. (new) The energy market system of claim 30, wherein the market interface exchanges market information with a plurality of market participants over a data communications network.

34. (new) The energy market system of claim 30, wherein the information relating to the energy generation and delivery system includes a model of the energy generation and delivery system.

35. (new) The energy market system of claim 30, wherein the energy transmission rights include fixed transmission rights.

36. (new) The energy market system of claim 32, wherein the optimal power flow function includes a security-constrained optimal power flow function.